

Fact Sheet

Post-Traumatic Stress Disorder (PTSD)

Post-traumatic stress disorder (PTSD) is an anxiety disorder that some people develop after seeing or living through an event that caused or threatened serious harm or death. Symptoms include flashbacks, bad dreams, emotional numbness, intense guilt or worry, angry outbursts, feeling “on edge,” and avoiding thoughts and situations that are reminders of the trauma.

Yesterday

- PTSD was once considered a condition of combat veterans who lacked the mental strength or courage to face their experiences on the battlefield, or who were faking illness to avoid their duties.
- Much of the general public and many mental health professionals doubted whether PTSD was a true disorder.
- Soldiers with symptoms of PTSD often faced rejection by their military peers and received little sympathy from society in general. Soldiers themselves were also reluctant to disclose symptoms of mental illness or to accept a psychiatric diagnosis.
- Those with PTSD symptoms were often removed from combat zones, or sometimes discharged from military service entirely, instead of receiving immediate care. Delays in diagnosis and treatment may have resulted in development of more serious, chronic, and disabling symptoms of the disorder.
- Some cases may be delayed, with symptoms showing up months after the traumatic event; some cases become chronic, requiring lifelong treatment.
- Effective treatments are available, including talk therapies such as exposure therapy, cognitive behavior therapy, and medications such as sertraline (Zoloft) and paroxetine (Paxil).
- Central to PTSD research is the study of the ability to manage fear and related responses to highly stressful events. Scientists are working to find all of the important factors that influence these responses, including relevant brain structures, biological or genetic traits, and psychosocial factors. Some examples include:
 - The amygdala, a brain structure known for its role in emotion, learning, and memory, appears to be active in fear acquisition, or learning to fear an event (such as touching a hot stove), as well as in the early stages of fear extinction, or learning not to fear.
 - Storing extinction memories and dampening the original fear response may involve the prefrontal cortex (PFC) area of the brain, involved in tasks such as decision-making, problem-solving, and judgment. A specific region of the PFC (ventromedial) has been found to be involved in sustaining long-term extinction of fearful memories, and the size of this brain area appears to affect its ability to do so.
 - In mice, GRP (gastrin-releasing peptide), a signaling chemical in the brain released during emotional events, seems to help control the fear response, and lack of GRP may lead to the creation of greater and more lasting memories of fear.

Today

- In 1980, PTSD was recognized as a diagnosable disorder in the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders*. A recent study shows that around 7.7 million American adults age 18 and older, or about 3.5 percent of people in this age group in a given year, have PTSD.
- PTSD is recognized as a mental disorder that can affect survivors of not only combat experience, but also terrorist attacks, natural disasters, serious accidents, assault or abuse, or even sudden and major emotional losses.

- A version of the 5-HTTLPR gene, which controls levels of serotonin, a brain chemical related to mood, may fuel the fear response.
- Environmental factors, such as childhood trauma, head injury, or a history of mental illness, may further increase a person's risk by affecting the early growth of the brain.
- Personality and cognitive factors, such as optimism and the tendency to view challenges in a positive or negative way, as well as social factors, such as the availability and use of social support, also appear to influence how people adjust to trauma.
- In terms of new treatments, D-cycloserine (Seromycin) is known to boost the activity of a brain chemical called NMDA, which is needed for fear extinction. In a study of 28 people with a fear of heights, scientists found that those treated with D-cycloserine before behavioral therapy showed reduced fear during the therapy sessions compared to those who did not receive the drug. Studies are underway using D-cycloserine with behavioral therapy for people with PTSD.
- In a small study, NIH researchers recently found that for people already taking a bedtime dose of the medication prazosin (Minipress) to control nightmares and sleep problems, adding a daytime dose helped to reduce overall PTSD symptom severity, as well as stressful responses to trauma reminders.
- NIH-funded researchers are also studying the use of propranolol (Inderal), a type of medicine called a beta-blocker, which may help reduce stress following a traumatic event by interrupting the creation of fearful memories. Early studies in small numbers of trauma victims suggest that Inderal reduces, and may even prevent, PTSD.

Tomorrow

- In the last decade, rapid progress in research on the mental and biological foundations of PTSD has lead scientists to focus on prevention as a realistic and important goal.
- Mass trauma events, such as the terrorist attacks on September 11, 2001 and natural disasters like Hurricane Katrina, have made scientists and doctors aware that they may need to help large numbers of people at one time. For these cases, NIH researchers are testing creative approaches to making cognitive and behavioral therapies and other interventions widely available, such as with Internet-based, self-help therapy and telephone assisted therapy.
 - In one study, people with PTSD first had a face-to-face session with a therapist. After this meeting, participants could go to a self-help website to find more information about PTSD and ways to cope, as well as receive online advice and coaching from their therapists. Overall, the scientists found this type of therapy to be a promising way to reach large numbers of people suffering with PTSD symptoms.
- NIH-funded researchers are exploring existing and new medications with the potential to target underlying causes of PTSD in an effort to pre-empt the disorder.
- Other areas of promising research include ways to enhance protective factors and to minimize risk factors to ward off full-blown PTSD after trauma, and the identification of factors that predict whether someone with PTSD will respond well to one type of intervention or another in order to develop personalized, more effective treatments.

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